Chronic pelvic pain in men

Sophie Ramsden MRCP DTM&H BMedSc MB ChB is a Genitourinary Medicine Registrar at Unity Sexual Health Centre, Bristol, UK. Competing interests: none declared.

Harriet Isotta-Day MB ChB BSc is a Clinical Fellow in Sexual and Reproductive Health, Unity Sexual Health Centre in Bristol, UK. Competing interests: none declared.

Patrick Horner MB BS MA FRCP MD is a Consultant Senior Lecturer in Genitourinary Medicine at Unity Sexual Health, University Hospitals Bristol NHS Trust, and University of Bristol, Bristol, UK. He has a specialist interest in men with non-gonococcal urethritis and the chronic pelvic pain syndrome. Competing interests: none declared

Abstract

Chronic pelvic pain is a common condition in men that is defined as 3 months of pain or discomfort in the pelvic region associated with urinary symptoms and/or sexual dysfunction. It is a diagnosis of exclusion and the aetiology is poorly understood. Hypotheses include increased pelvic floor tone as well as infective and inflammatory causes. Given the wide variation in symptoms and potential causes, it is important to spend time collating an individual patient's symptom profile so the management plan can be tailored appropriately. A national multidisciplinary consensus guideline recommends a multidisciplinary team approach with pharmacotherapeutic, physical and psychosocial components integrated into a holistic treatment programme individualized to the patient. Management is likely to include a combination of interventions such as antibiotics, α-adrenergic antagonists and simple analgesics, alongside pelvic floor relaxation and psychological support. Detailed discussion with patients about the feedback loops involved in pelvic muscle tension and pelvic pain has also been found to be therapeutically beneficial.

Keywords

Chronic pelvic pain syndrome; chronic prostatitis; increased pelvic floor tone; lower urinary tract symptoms; male; sexual dysfunction

Key points

- Pain can be felt anywhere throughout the pelvis and genitals, and can be associated with lower urinary tract symptoms and sexual dysfunction
- The aetiology of the condition is poorly understood. Hypotheses include increased pelvic floor tone and infective and inflammatory causes
- An individual patient's symptoms profile can be collated from a careful history and validated symptom scores
- Management can then be tailored to the individual patient's symptoms and will probably include a combination of pharmacological and non-pharmacological interventions

Introduction

The chronic symptomatic prostatitis syndromes include chronic bacterial prostatitis and chronic prostatitis/chronic pelvic pain syndrome (CP/CPPS), the latter being much more common.[1,2] CP/CPPS, on which this article focuses, is defined as pain or discomfort in the pelvic region,

associated with urinary symptoms and/or sexual dysfunction, that has lasted for at least 3 of the previous 6 months, and for which differential diagnoses have been excluded. [1,2]

CP/CPPS presents a major healthcare burden in men, with a prevalence of 8.2% (range 2.2–9.7%).[1,2] It can have a significant impact on patients' quality of life, but its poorly understood aetiology and complex pathophysiology pose a challenge to effective management and often lead to unsatisfactory treatment outcomes.[1–3] Clinical trials have failed to identify an effective monotherapy, and current recommendations are largely based on expert opinion. Current guidelines advise clinicians to identify the patient's individual symptom pattern and adopt a symptom-based treatment approach that also addresses psychosocial factors. [1–3]

Aetiology

The aetiology of CP/CPPS is not well understood, and the underlying pathophysiology is likely to be complex. CP/CPPS is thought to be the result of inflammatory, infectious damage and/or neurological dysfunction.[2,3] However, infective causes, such as bacterial prostatitis and non-gonococcal urethritis, appear to account for only a minority of cases.[1–3]

Experience from a specialist CP/CPPS clinic in Bristol, supported by the literature, indicates that many patients have increased pelvic floor muscle tone. This can cause a symptomatic increase in urethral resistance to urinary flow and/or reflux into the prostate.[3,4] Because many pelvic organs, including the prostate, bladder, urethra, rectum and genital structures, are innervated by the same nerve plexus, it is possible that pain from increased pelvic floor muscle tone and/or intraprostatic urinary reflux can be experienced as referred pain throughout the pelvis.[3,4]

Men with obsessive personality traits who tend to get locked into circular trains of thought are over-represented in patients with CP/CPPS in Bristol.[3] These men may subconsciously tense their pelvic floor muscles when stressed, which could itself be the cause of pain. Underlying anxiety about the cause of pain may worsen symptoms further. This can create a positive feedback loop in susceptible men, with anxiety about their CP/CPPS leading to increasing symptoms, which then further increases their anxiety (Figure 1).[3]

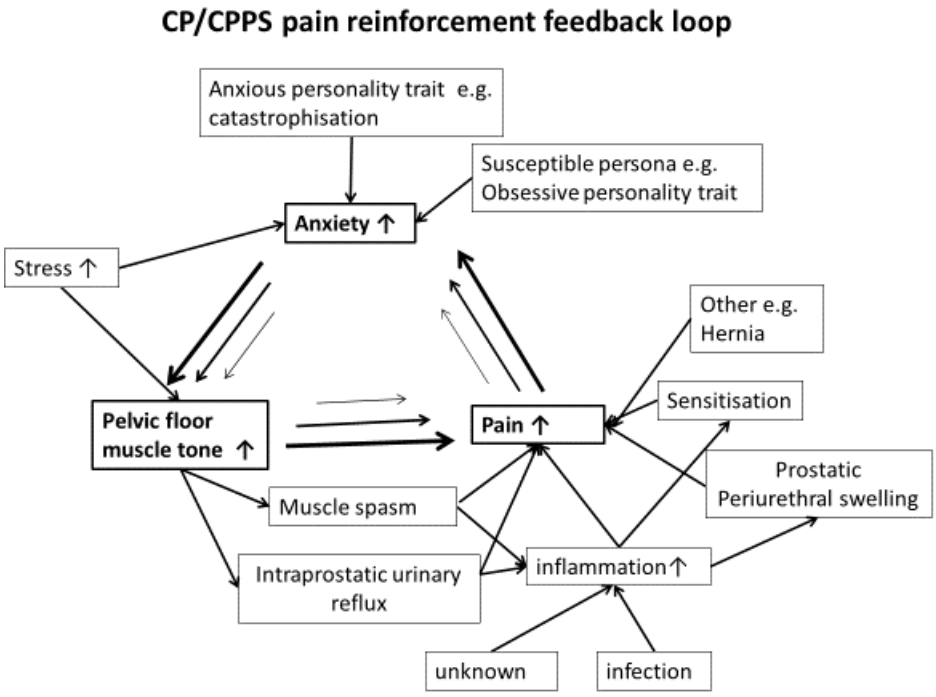


Figure 1

Adapted from Crofts et al.[3]

Diagnosis

History

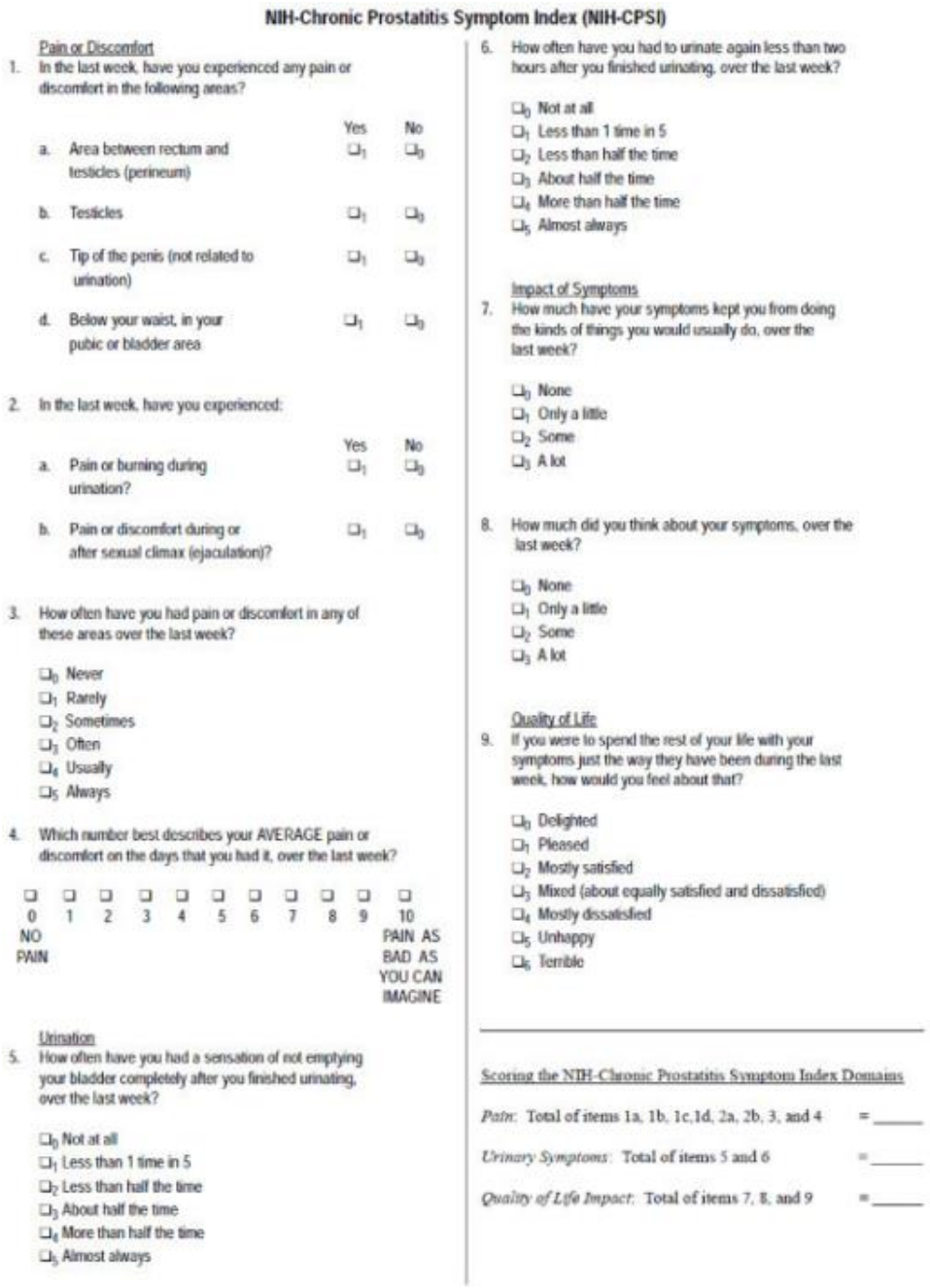
CP/CPPS can present in a variety of ways. Patients can complain of pain anywhere in the pelvis, most commonly lower abdominal, perineal, testicular, penile and/or ejaculatory pain. Pain is often accompanied by lower urinary tract symptoms (LUTS) such as dysuria and voiding difficulties, as well as sexual dysfunction.[1–3]

Because CP/CPPS is a diagnosis of exclusion, it is important to ensure that other differential diagnoses have been ruled out. This includes testicular and prostatic cancer, urinary tract infection, chronic bacterial prostatitis, infectious causes of non-gonococcal urethritis, epididymo-orchitis, bladder outlet obstruction, urethral stricture, balanitis xerotica obliterans and inguinal hernia.

Because of the multifactorial nature of the condition, it is important to spend time collating a symptom profile, including potential precipitating factors. This can involve taking a detailed sexual

history and exploring the patient's psychosocial symptoms (e.g. anxiety, stress) and past medical, drug and social history, including details of their support network.[2,3] By adopting an 'active' listening approach, the physician can begin to develop a therapeutic relationship, enabling the patient to disclose specific anxieties and concerns they have about the cause and consequences of the pain, for example persistent infection, malignancy and infertility.[3] Exploring a patient's personality traits is also helpful as, in our experience, patients with a problem-solving persona (obsessive personality trait) respond better to a detailed explanation of the probablee aetiology than those who suffer from anxiety.

The National Institutes of Health Chronic Prostatitis Symptom Index (NIH – CPSI; Figure 2) is an objective assessment tool that can be used to monitor patients' symptoms; it should be completed at each consultation. This score covers the type, frequency and severity of pain and associated symptoms, as well has how much these symptoms are impacting on the patient's quality of life. A 6-point decline from the baseline total score is considered the threshold for a positive therapeutic response, although a 25% decrease can also be used.[1,5]



NIH-Chronic Prostatitis Symptom Index (NIH-CPSI)

Pain or Discomfort

1. In the last week, have you experienced any pain or discomfort in the following areas?

	Yes	No
a. Area between rectum and testicles (perineum)	❑1	❑0
b. Testicles	❑1	❑0
c. Tip of the penis (not related to urination)	❑1	❑0
d. Below your waist, in your pubic or bladder area	❑1	❑0

2. In the last week, have you experienced:

	Yes	No
a. Pain or burning during urination?	❑1	❑0
b. Pain or discomfort during or after sexual climax (ejaculation)?	❑1	❑0

3. How often have you had pain or discomfort in any of these areas over the last week?

❑0 Never
❑1 Rarely
❑2 Sometimes
❑3 Often
❑4 Usually
❑5 Always

4. Which number best describes your AVERAGE pain or discomfort on the days that you had it, over the last week?

❑ 0 NO PAIN ❑ 1 ❑ 2 ❑ 3 ❑ 4 ❑ 5 ❑ 6 ❑ 7 ❑ 8 ❑ 9 ❑ 10 PAIN AS BAD AS YOU CAN IMAGINE

Urination

5. How often have you had a sensation of not emptying your bladder completely after you finished urinating, over the last week?

❑0 Not at all
❑1 Less than 1 time in 5
❑2 Less than half the time
❑3 About half the time
❑4 More than half the time
❑5 Almost always

6. How often have you had to urinate again less than two hours after you finished urinating, over the last week?

❑0 Not at all
❑1 Less than 1 time in 5
❑2 Less than half the time
❑3 About half the time
❑4 More than half the time
❑5 Almost always

Impact of Symptoms

7. How much have your symptoms kept you from doing the kinds of things you would usually do, over the last week?

❑0 None
❑1 Only a little
❑2 Some
❑3 A lot

8. How much did you think about your symptoms, over the last week?

❑0 None
❑1 Only a little
❑2 Some
❑3 A lot

Quality of Life

9. If you were to spend the rest of your life with your symptoms just the way they have been during the last week, how would you feel about that?

❑0 Delighted
❑1 Pleased
❑2 Mostly satisfied
❑3 Mixed (about equally satisfied and dissatisfied)
❑4 Mostly dissatisfied
❑5 Unhappy
❑6 Terrible

Scoring the NIH-Chronic Prostatitis Symptom Index Domains

Pain: Total of items 1a, 1b, 1c,1d, 2a, 2b, 3, and 4 = _____

Urinary Symptoms: Total of items 5 and 6 = _____

Quality of Life Impact: Total of items 7, 8, and 9 = _____

Figure 2 The NIH-CPSI

Available from http://www.upointmd.com/NIHCPSIEnglish.pdf.

Examination

This should include:

- abdominal examination, including hernial orifices
- genital examination of the penis and testicles

- digital rectal examination (DRE) to assess prostate size, tenderness and pelvic floor muscle tone. It is important to differentiate between tenderness felt on palpation of the prostate and tenderness associated with palpation of the pelvic floor muscles. Pelvic floor muscle tenderness can be assessed by palpating the prostatic bed.

These examinations can be carried out in non-specialist settings, and can provide useful information for excluding other diagnoses and helping to guide individual management. For example, if the doctor can demonstrate to the patient that he has increased pelvic muscle tone, with tenderness on palpation, and then explain how this could result in symptoms experienced elsewhere in the pelvis (referred pain), this can lead to a focus on pelvic floor relaxation exercises within the management plan.[3,5]

Investigation

A list of potential investigations is detailed in the UK multidisciplinary consensus guideline; they are divided into those which can be undertaken in non-specialist and specialist settings.[2] These help to exclude the differential diagnoses detailed above.

The following are considered to be core investigations: a urinary dipstick and/or midstream urine specimen for culture, microscopy and sensitivity to exclude the presence of a urinary tract infection and haematuria; a nucleic acid amplification test (NAAT) test for chlamydia (if at risk[3]); and prostatic-specific antigen (PSA), if indicated.[2] The UK consensus guideline provides advice on when to undertake PSA testing.[2] In a specialist setting, testing for chronic bacterial prostatitis using the four- or two-glass test, and/or for urethritis and other sexually transmitted infections, such as *Mycoplasma genitalium*, can be undertaken in order to exclude these infections.[2,3]

Other investigations include uroflowmetry, cystoscopy or retrograde urethrography in order to exclude bladder outlet obstruction, urethral stricture or bladder neck stenosis in selected patients with LUTS.[1–3,5] Investigations such as full blood count and inflammatory markers have not been shown to be helpful in diagnosis.[1]

Management

Single treatment modalities have proved largely ineffective in the management of CP/CPPS, perhaps not surprisingly considering the likely multifactorial nature of the condition. The expert consensus is that patients should be managed according to their individual symptom profile.[1,2]

The national consensus guideline explores, in detail, the evidence base supporting potential therapeutic interventions and advises on how men with CP/CPPS should be managed.[2] Options for first-line pharmacological treatment include antibiotics, α-adrenergic antagonists and simple analgesics. For patients with early-stage chronic bacterial prostatitis and CP/CPPS, a quinolone (e.g. ciprofloxacin, ofloxacin) for 4–6 weeks is recommended as first-line therapy. A repeat course of antibiotic therapy should be offered only if a bacterial cause is confirmed or there is a partial response to the first course of treatment.[2] Treatment with α-adrenergic antagonists should be considered in patients who present with significant LUTS on voiding.[2] There is some evidence that a combination of α-adrenergic antagonists and antibiotics may be more effective than monotherapy.[1–3,5] Early use of treatments targeting neuropathic pain and/or referral to specialist services should be considered for patients who do not respond to initial measures.

If a clinically relevant level of psychosocial symptoms is observed, referral to a psychosocial specialist (e.g. psychiatrist, specialist psychologist, cognitive behavioural therapist) should be considered.[2] Therapies that aim to improve relaxation and coordinated use of the pelvic floor muscles, such as biofeedback physical therapy and pelvic floor re-education, as well as myofascial trigger point release, can play a role in improving symptoms in patients with CP/CPPS.[2]

The national consensus guideline recommends a multidisciplinary team (MDT) approach, with pharmacotherapy, physical and psychosocial approaches integrated into a holistic treatment programme that is individualized to the patient.[2] The MDT can include urologists, pain specialists, nurse specialists, specialist physiotherapists, general practitioners, cognitive behavioural therapists/psychologists and sexual health specialists.[2]

The specialist CP/CPPS clinic where the authors are based uses a biopsychosocial approach tailored to individual patients. This can include a combination of interventions including pharmacological, psychological and pelvic floor muscle relaxation advice, including physiotherapy referral.[3] Patients

are managed by one clinician who refers patients as necessary if they have a poor response to initial interventions.

If increased pelvic floor muscle tone and tenderness is detected on DRE, experience has demonstrated that patients benefit from an explanation about the feedback loop of pelvic pain, anxiety and increased pelvic tone (see Figure 1).[3,5] The authors have found it useful to use a detailed patient information leaflet (available on request) containing a diagram of the pelvic floor structures, alongside a diagram illustrating this feedback loop. Verbal and written advice on pelvic floor relaxation techniques, specifically on how to undertake pelvic floor drop exercises, is provided (available on request). Distraction techniques such as mindfulness and physical exercise are also promoted. The use of α-adrenergic antagonists is not limited to men with LUTS and is also used in men without LUTS who have increased pelvic floor muscle tone on DRE. Men who respond poorly to these initial interventions are referred for pelvic floor physiotherapy to teach them how to isolate and relax their pelvic floor muscles, and/or a pain specialist.

In men with urethritis, which is non-infective (NAAT-negative for *Chlamydia* and *M. genitalium*) and possibly linked to intraprostatic urinary reflux, clarithromycin 500 mg twice daily for 3 weeks is prescribed. This is an off label use based on a previous study indicating that 3 weeks of erythromycin 500mgs qds can be of benefit, as clarithromycin is better tolerated.[3] This probably works through its anti-inflammatory properties.[3,5] Patients with bothersome LUTS who do not respond to initial therapy are referred for urological assessment.[3,5]

Despite the definition of CP/CPPS stating that the pain must have been present for 3 of the preceding 6 months, it is possible that earlier identification, enabling exploration and discussion of the possible underlying mechanisms, with appropriate management and reassurance, could reduce overall morbidity by shortening the duration of symptoms.[3,5] This is supported by the observations of Kenyon et al., who reviewed outcomes for 24 men in Bristol with CP/CPPS symptoms, identified early (<90 days' duration) and late, with an average NIH-CPSI score of 24.7. They observed a similar fall in NIH-CPSI score, of 8.5 versus 10.3, respectively.[3,5] This, however, needs formal evaluation in a clinical trial.

Prognosis and follow-up

In general, patients have a gradual response to treatment and need support and reassurance while undergoing management. This can be provided through follow-up in a specialist CP/CPPS service using an MDT approach.[2,3,5]

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Question 1
A 29-year-old man presented with a 1-month history of an uncomfortable sensation at the tip of his penis and pain passing urine. He also described the sensation of not being able to completely empty his bladder after passing urine. He had had a negative chlamydia and gonorrhoea nucleic acid amplification test (NAAT) at his GP 2 weeks previously. Examination of his penis and testicles was normal.

What is the most appropriate initial investigation?
A Testicular ultrasound scan
B Urine dipstick
C Urethral smear
D Chlamydia and gonorrhoea NAAT
E Prostate-specific antigen

Answer: C. If a urethral smear is available, it will provide the most accurate and immediate information on whether there is urethritis. The patient has no testicular symptoms or signs, so an ultrasound scan (A) will not be helpful. Urine dipstick (B) can provide some information to distinguish between a urinary tract infection (leucocytes alongside nitrites and blood) and a sexually transmitted infection (leucocytes only). However, given that a sexually transmitted infection is the most likely cause in a man of this age, a urethral smear will be more sensitive.Chlamydia and gonorrhoea nucleic acid amplification testing (D) will be helpful and should be performed in this patient. However, he recently tested negative after the onset of his symptoms, so it is very unlikely that either of these infections will be causal in this case. *Chlamydia* only causes about 40% of cases of non-gonococcal urethritis. In addition, a urethral smear will provide immediate results to enable a diagnosis to be made in clinic. Prostate-specific antigen (E) is not a first-line investigation here as the patient is not in the right age cohort.

Question 2
A 32year-old man presented with intermittent pain passing urine and a dull ache felt at his perineum. He was also experiencing increased frequency of urination. Two months previously, he had been found to have non-gonococcal urethritis. This initially responded well to antibiotics, but his symptoms had returned shortly after completing treatment. Digital rectal examination showed a smooth, normal sized, non-tender prostate. The prostatic bed (pelvic floor muscles) was tense and tender to palpation.

Investigations
- Early morning urethral smear was negative
- *Mycoplasma genitalium* nucleic acid amplification test was negative

What is the most important next step in pharmacological management?
A Paracetamol
B Ibuprofen
C Antibiotics for 4 weeks
D α-Adrenergic antagonists
E Gabapentin

Correct answer: D. All of these pharmacological interventions can play a role and can be used in conjunction with each another. However, α-adrenergic antagonists are the most important as the

patient has lower urinary tract symptoms and evidence of increased pelvic floor tone on digital rectal examination.

Question 3

A 52 year old man who is suffering from chronic pelvic pain is diagnosed with increased pelvic floor tone. Given that the patient's prostatic bed was tender what non-pharmacological treatment is likely to make his symptoms worse?

A Mindfulness
B Discussion about how increased pelvic muscle floor tone can cause his symptoms
C Cognitive behavioural therapy
D Pelvic floor relaxation exercises
E Pelvic floor strengthening exercises

Correct answer: E. E is correct as this would worsen his symptoms. Tenderness of the prostatic bed can be an indication of increase pelvic muscle floor tone. Patients, even after a detailed explanation of the importance of pelvic floor muscle relaxation exercises, find these difficult to undertake and inadvertently focus on strengthening not relaxation after the initial consultation. It is important to explore this at the follow-up consultations if symptoms have not improved. B in conjunction with D is likely to be helpful through making the patient aware of their pelvic floor and how to relax the muscles to improve symptoms. A can also aid with pelvic floor relaxation. C can be beneficial if increased pelvic floor tone is thought to be secondary to anxiety.